

**Remarks of Mark Ginsberg
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U.S. Department of Energy
Washington, D.C.**

**Eighth National Green Power Marketing Conference
November 3, 2003**

And now you are eight. Yes, this is the eighth year of the annual green power marketing conference. A sure sign you are growing and gaining respect. So, let me extend my congratulations to the sponsors and hosts. Let me also pay tribute to the DOE, EPA and NREL Green Power leaders who have worked to advance this industry. And to our Federal Energy Management Program and its Federal agency partners who are leading by example by purchasing green power. And let me compliment all of you for your efforts to create a new industry in such a short time. It is an important industry and you should be proud of its successes to date, and its boundless opportunities.

Every once in a while, it is worth reflecting on what got us here in order to understand the future. The National Archives proclaims: "The past is prologue." So, how did we get to our eighth conference? Beyond the hard work, leadership and vision of a bunch of you, it is simply a great concept. What a concept: giving consumers a choice. It's a great concept that gives energy users an opportunity to get power from their favorite clean energy source. It's a great concept that allows people of a like mind to *aggregate* their collective purchasing power. And it's a great concept that allows users to get a predictable price.

But even the best concept may not be universally or quickly adopted. "*If it were easy, it would be done by now.*" And we wouldn't need a conference to address the challenges. I think we would all accept that the electric light bulb is a pretty good concept. When Thomas Edison invented his "A lamp" in the 1880s, it still took 30- 40 years for that brilliant invention to get into widespread use. It took manufacturing techniques, rural electrification, acceptance, and a bit of luck to gain widespread adoption. A confluence of events worked to make it happen.

So, even a great concept like green power requires a bit of time for widespread adoption. But we're doing really well for *such a short time*! The number of customers participating in utility green pricing programs has increased four-fold since 1999. Sales of green power through utility green pricing programs increased by 58% last year (utilities sold nearly 900 million kWh or 102 average MW of green power to customers in 2002). Nationwide, more than 400,000 electricity customers purchase green power and since 1999, there has been nearly a 10-fold increase in the amount of renewable energy capacity supported through customer demand for green energy. And much like the A-lamp, a combination of events is working to advance green power. Let me talk about some of those events, the drivers of green power marketing.

This nation has been blessed with plentiful energy. In fact, our traditional energy sources have spoiled us, allowed us to become wasteful. We have come to expect cheap, always available electrical supplies. We have built businesses that depend on reliable energy, where even short outages are disruptive to our productivity. We have also built businesses based on certain cost structure. On-time, on-budget expectations.

But the last few years have seen uncertainty creep into our energy supplies. Rolling brownouts in California and here in Chicago a few years ago. Last summer's regional blackout in the northeast. And there has been price uncertainty, particularly with natural gas volatility. As unfortunate as those events have been, they have worked to the advantage of this industry. People are willing to pay a small premium for assured prices and availability.

But there are other advances that help green power gain a solid foothold in the market place. Policy and technical developments are adding to the critical mass. Perhaps the most important factor to increasing green power markets is your hard work, work that has helped increase the access to green power and made it more easily available.

There are now over twenty vendors selling renewable energy certificates, and about 350 utilities offering green pricing in thirty-five states. In addition, some 20 retail green power marketers offer about 35 different green power products to customers in eight states through retail competition.

That's quite an accomplishment in such a short time. However, there is more to be done. It still represents only about 10% of all utilities nationwide and, unless restructured markets are designed properly, it can be very difficult for green power marketers to effectively reach their customers. Currently only about 45% of Americans have access to grid connected green power. That number needs to be 100%.

Some recent policy developments such as renewable portfolio standards have lead to substantial increases in renewable energy capacity. It all begins to add up when you look at 1000 MW in Texas, 250 in Iowa, 300 in Minnesota, 150 coming in Pennsylvania and more in Wisconsin and Arizona. Nine states now have policies in place that require or encourage utilities to offer their customers green power options. This year marked the launch of the first statewide green pricing program in North Carolina.

And to paraphrase the old line: "a thousand Megawatts here and a thousand Megawatts there, pretty soon you're talking about real green power."

Despite these policy advances, one area under your control, which needs more work is in developing more effective marketing techniques. Many Americans have no idea where their electricity comes from. Even in regions, which have active markets – such as the mid-Atlantic – despite some successes, marketing is very limited. Even though many green pricing programs have now been operating for several years, customer participation rates are less than 1% for many utility programs. Even the most successful programs have garnered customer participation rates of only between 3% and 5%. Analyses of consumer buying habits for other environmental products and the experiences of green power marketing abroad – suggests that double digit green power market penetration rates could be achievable in the U.S.

We are just beginning to see the impact of greater market demand for renewable energy. Over a thousand megawatts of new renewable generating capacity has already been built, with another 400 megawatts under development. Yet green power markets are still in their infancy, and have the potential to support the development of as much as 7,000 megawatts of new renewable energy generating capacity over the next decade.

There are still challenges and breakthroughs needed, but here are some examples of technical advances in renewable energy in recent years:

- Photovoltaics continue to get better and production methods more reliable. From \$2.00 a kWh in 1980, PV is 20-30 cents now and DOE's goal is 6 cents by 2020.
- Concentrating solar has grown to 354 MW operating since 1985 at 13-14 cents a kWh with a goal to get costs to 3.5-5.5 cents.
- Geothermal capacity has grown to 2800 MW here at 5-8 cents a kWh, half what it was in 1985, with a goal of cutting it in half again by 2010.
- Biomass produced 6500 MW in 2000 with prices of 8-12 cents, half of what they were in 1980 with a goal of cutting it in half again by 2010.
- Perhaps the most exciting development is in wind. Its cost is 4-6 cents a kWh, down from 80 cents in 1980. To me, the most remarkable development is the increasing sophistication of our knowledge of wind turbine blades. We thought we had done well, but we have learned how to craft bigger blades and those that can grab low wind speeds of 3-4 MPH. We are also exploring offshore applications that hold great promise.

All these developments have come at a time that consumers are demonstrating that they want clean and green energy supplies. The truth of this is shown in the growing numbers of major companies and institutions joining the Green Power Partnership by committing to buy at least a portion of their supplies from green power resources.

I'm particularly proud of the leadership role Federal agencies have demonstrated in purchasing increasing amounts of green power and setting their good example for others to follow. There are currently 21 Federal members of the Green Power Partnership including 9 members that have qualified for the Leadership Club. Among those, I am proud to say, is DOE's Headquarters in Washington which now purchases approximately 40% of its energy from renewable resources. These Federal partners have committed to purchasing a combined 225 Gigawatt hours of green power per year avoiding the annual emissions roughly equivalent to 27,000 cars.

But Federal agencies support for the use of renewable energy goes well beyond the commitments made in the Green Power Partnership. Through Executive Order 13123, Federal agencies have a goal of using approximately 1400 GWh (Equivalent to 2.5% facility electricity usage) of non-hydro renewable energy per year by 2005, and they have come a long way toward meeting that goal. Federal agencies currently use in excess of 850 Gigawatt hours of non-hydro renewable energy each year of which over 380 Gigawatt hours is from renewable power purchases.

There are two agencies, which deserve special recognition for their leadership in the green power market place. Not surprisingly one is our co-sponsor for this event. True to their mission, the EPA is currently purchasing well over 15% of their electricity from renewable power and appears to be purchasing more everyday. The other is the United States Air Force. In two years, the Air Force has gone from purchasing virtually no green power to purchasing approximately 150 Gigawatt hours at 24 bases. Later in the conference we will hear from the Air Force about how they intend to drastically expand their use of renewable energy in the coming years.

Let me put a plug in for FEMP's Wednesday afternoon extra session from 2:30 to 3:30 on November 5. The FEMP meeting is open to everyone and will include an update on the Federal agency renewables goal and FEMP's plans for helping agencies meet their goals. Information on

how Federal agencies purchase electricity will also be presented by the Defense Energy Support Center and General Services Administration.

Let me share some other good news that may be a bow wave for green power. We are seeing increasing interest in the use of solar energy in a variety of places, from the old niche markets to new home construction. From the dozen university teams who participated in the first Solar Decathlon on the Mall in Washington, we have heard such interest that we are expanding the field to 20 universities when we conduct the next event in 2005. At the annual solar conference, held here in Washington a few years ago, the ZEH called "the Solar Patriot" was placed on the Mall for a few days. It is now safely at home in Virginia with a family living in its 3000 square feet – with expectations that it will achieve 100% solar by the end of this year.

Perhaps more important than that is the enthusiasm for our Zero Energy Homes initiative. The goal is homes that are so efficient and that produce as much energy as they need over the year. Of course, my own personal goal is homes that aren't just 30% or 50%, or even 100% more efficient - 120% – homes that give *back* to the electric grid.

A year ago, I was at the opening of John Wesley Miller's ZEH in Armory Park del Sol in downtown Tucson. It is a joint effort with Tucson Electric and the National Association of Homebuilders Research Center, but it is one ZEH in a subdivision of 100 solar homes. Subsequently, Clarum Homes, a builder in Elk Grove, CA built three units and sold them in the first two weeks, convincing them to build more. And Morrison Homes, the leading builder in Watsonville, CA, is in the midst of building 300 ZEHs. They are so overwhelmed by the demand, they are committing to build 300 more.

It's not confined exclusively to new homes. With 4 Times Square in midtown Manhattan, with solar on the upper 14 stories of the 48 story high rise and fuel cells on the 4th floor, we are beginning to see use of solar and fuels cells in high rises and commercial buildings. Look at our highperformancebuildings.gov website to see over 50 examples of advanced commercial buildings. They are leaders in efficiency today, but are likely candidates for tomorrow's green power.

This year's story can't be complete without a mention of hydrogen. Many of you may have heard that the President announced a major hydrogen initiative that would lead to a child born today having a choice of hydrogen for his or her first car. Is that the ultimate green power? I don't know. But hydrogen offers a very versatile energy supply option that can be produced from renewable sources. Produce hydrogen from renewables and use it to power both cars and buildings – with no greenhouse gasses. Now that's worth exploring!

All these examples and the new products in the market make it even more likely that green power will be accepted more widely. I think it's ready to burst with enthusiastic participation. As you look at the list of homebuilders, it's becoming more obvious. As you look at the list of over 350 utilities and energy service providers offering green power, it's becoming more obvious. When you look at the long list of cities, of states, of universities, it's becoming more obvious. And when you look at the growing list of Fortune 500 companies joining the green power movement – companies ranging from Ben and Jerry's and Kinko's to Lockheed Martin and Toyota – it is becoming more obvious that you have a great success on your hands.

Congratulations again on reaching the ripe age of eight. Congratulations for being here. You have a great agenda in front of you. I hope you learn a lot and take it home to apply it. And thank you all for helping advance this important industry.